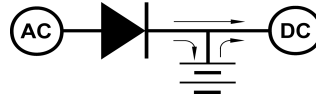


Time-proven, reliable station DC power ensures a high availability of mission-critical safety devices, controls, alarms, switchgear, instrumentation, inverters & auxiliary DC power. **StatiVolt® Rectifiers** are designed & built for decades of robust, industrial duty & field serviceability. These are integrated with proven **EnerSys VRLA** or **VR NiCd batteries** to provide on-line, self-contained, single vendor DC UPS solutions.

## DC UPS Systems

**Built & Power Ready – 3 Year Full Warranty**



### Charger Features

#### Reliability by Design

- Robust industrial duty
- Failsafe, soft-switching, low noise
- Natural convection cooled

#### Regulated DC Power

- Constant  $V_{dc}$  charging & supply
- Minimal noise & ripple voltage

#### Protection

- Input & output circuit breakers
- Inherent surge rejection
- Transformer isolation
- Output current limiting
- Failsafe output V control

#### Versatile Functions & Options

- Input Power Factor Correction
- Timer Delayed Start-up
- Charge Functions & Options
- Alarm / Annunciation Options
- Special Utility Options
- Tropical / Marine / Fungus Proofing

### DC UPS Features

Vdc	Rectifier * $I_{dc}$ Amps	Battery Max Ah **	% Eff
24	15-150	760	75
48	15-100	950	80
72	15-75	760	85
125	15-75	570	85

\* Rectifiers have a 1 phase AC input

\*\* Valve-regulated lead acid, 12 V blocks

#### DC UPS System Solutions

- Simple, parallel rectifier operation
- Batteries sized per IEEE 485 / 1115
- Breaker protected
- Single or double cabinets
- Total front access
- Optional battery monitoring & DC distribution

#### Design & Test Standards

- CSA SPE-1000 inspected & approved
- Built to CSA C22.2 No. 107.1, 107.2
- Magnetics designed for Class H, 180°C

### VRLA Battery Features

- **EnerSys SBS EON® AGM** pure lead
- Long life, high energy, great shelf life
- 12 V blocks (6 cells); 15 year life
- Front terminals for easy access
- Non-hazardous transportation

### NiCd Battery Features

- **EnerSys Varta VGL-VGM® NiCd**
- Valve regulated, H<sub>2</sub> recombination
- Low maintenance
- Pocket plate nickel cadmium
- 1.2 V cells; 25 year life

### Quality Assurance

- Station Charger-System, N299.4
- EnerSys Batteries, ISO9001

### Warranty

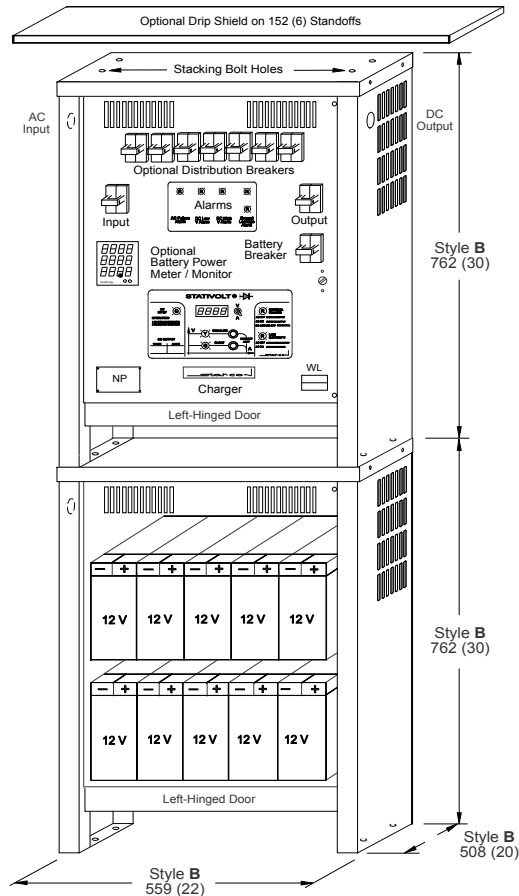
- 3 year system full warranty, 2 year extended option
- 30 year charger / system design life
- 20+ year charger parts & service availability
- 5 year full, 5 year pro-rated VRLA battery warranty
- 5 year full, 20 year pro-rated NiCd battery warranty

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**DC UPS Systems – Small Capacity**  
**Built & Power Ready – 3 Year Full Warranty**



**Optional Battery DC Power Meter - AccuEnergy AcuDC 243™**

- Design : Intelligent, multi-function DC power meter
- Panel Display : Large character, 3 line LCD display
- Communications : RS-485, Modbus-RTU protocol output
- Digital RS-485 Out** : 2 DC System alarms of choice
- Analog RS-485 Out** : Voltage, V V
- Local & Real Time : Current, I A
- Measurements : Power, P W, kW
- : Energy, E Wh, kWh
- : Capacity Ah
- Data Logging : All measurements, 1 minute intervals
- Reliability : MTBF is 132,000 hours (15 years)

**Standard Sheet Steel Cabinets Cabinet Options**

- NEMA 1 (IEC 60529 IP 20)
- Front access via doors
- 14 gage side panels
- 10 gage component mounts
- Barrier between charger & battery
- Front & back panel ventilation
- Powder coated baked enamel
- NEMA 2, IEC IP22 drip shield
- Zinc powder coat paint primer
- Epoxy powder coat paint
- Key-lockable door handles
- Tropical / Marine / Fungus proofing

**Battery Charging**

- PB select / defeat float & equalize
- V c/w 8-72 h adjustable equalize timer. Independent V adjustments.
- Auto equalize after outage option.

**Easily front-accessible and standardized front terminal VRLA battery mounting**

**Installation**

- Top / side cable entry
- Required Ventilation Clearance:
  - 152 mm (6 in) side / rear
  - 152 mm (6 in) rear / top

**CSA SPE-1000 Approved**

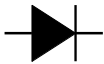
Rectifier DC V	A	EnerSys VRLA Battery		Cabinet Style	Max Mass kg (lbs)
		Max Ah	_Strings * x Type		
24	15-150	400	4x 2xSBS100F ®	B	430 (946)
48	50-100	200	2x 4xSBS100F ®	B	430 (946)
72	15-50	100	1x 6xSBS100F ®	B	365 (803)
125	30-75	91	1x 10xSBSC11F ®	B	540 (1188)

**Notes**

- Sizes may vary for certain options
- Add 152 (6) to height for drip shield
- All dimensions in mm (inches)
- Drawing is not to scale

\* No. of parallel battery strings





DC UPS Systems – Medium Capacity  
Built & Power Ready – 3 Year Full Warranty

Optional Battery DC Power Meter - AccuEnergy AcuDC 243™

- Design : Intelligent, multi-function DC power meter
- Panel Display : Large character, 3 line LCD display
- Communications : RS-485, Modbus-RTU protocol output
- Digital RS-485 Out : 2 DC System alarms of choice

- Analog RS-485 Out : Voltage, V V
- Local & Real Time : Current, I A
- Measurements : Power, P W, kW
- : Energy, E Wh, kWh
- : Capacity Ah

- Data Logging : All measurements, 1 minute intervals
- Reliability : MTBF is 132,000 hours (15 years)

Cabinet Options

- NEMA 2, IEC IP22 drip shield
- Zinc powder coat paint primer
- Epoxy powder coat paint
- Key-lockable door handles
- Tropical / Marine / Fungus proofing

Standard Sheet Steel Cabinets

- NEMA 1 (IEC 60529 IP 20)
- Front access via doors
- 14 gage side panels
- 10 gage component mounts
- Barrier between charger & battery
- Front & back panel ventilation
- Powder coated baked enamel

Battery Charging

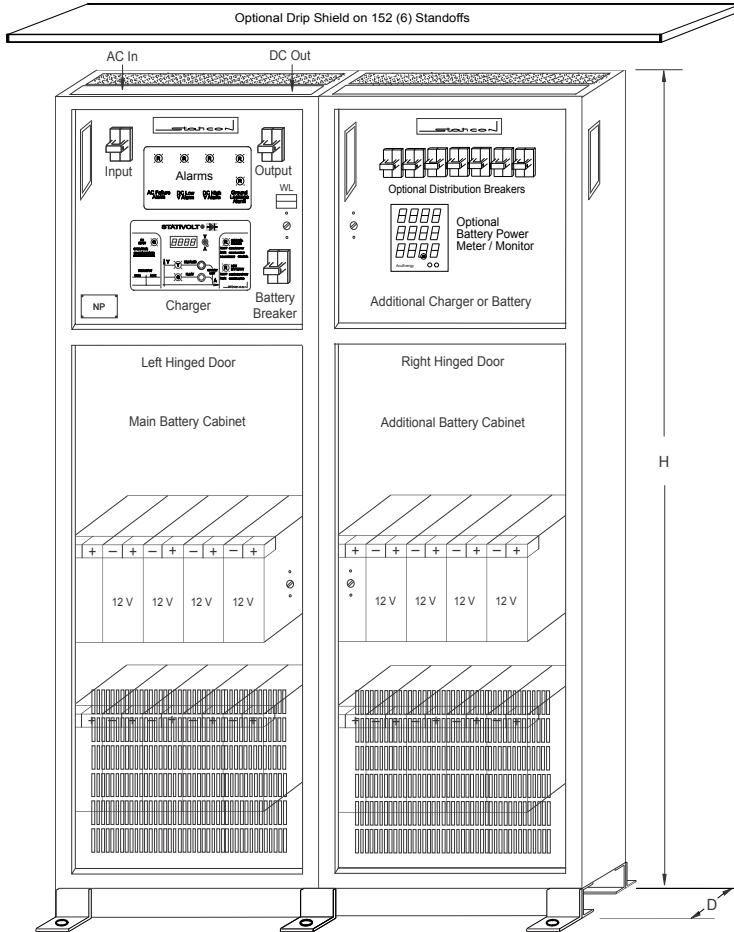
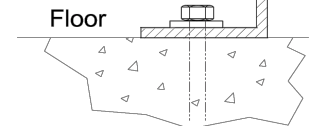
- PB select / defeat float & equalize
- V c/w 8-72 h adjustable equalize timer. Independent V adjustments.
- Auto equalize after outage option.

Easily front-accessible and standardized front terminal VRLA battery mounting

CSA SPE-1000 Approved

Floor Anchor Angle

- 76 (3) W
- 51 (2) H
- 51 (2) D
- 6.4 (1/4) thick



Rectifier DC V	DC A	EnerSys VRLA Battery		No. of Cabs	Dimensions mm (in)			Max Mass kg (lbs)
		Max Ah	_Strings * x Type		H	W	D	
24	100-150	760	4x 2xSBS190F®	1	2057 (81)	762 (30)	762 (30)	650 (1430)
48	15-50	380	2x 4xSBS190F®	1	2057 (81)	762 (30)	762 (30)	600 (1320)
48	75-100	380	2x 4xSBS190F®	1	2057 (81)	762 (30)	762 (30)	630 (1386)
48	75-100	950	5x 4xSBS190F®	2	2057 (81)	1524 (60)	762 (30)	1420 (3124)
72	15-30	190	1x 6xSBS190F®	1	2057 (81)	762 (30)	762 (30)	490 (1078)
72	50-75	380	2x 6xSBS190F®	1	2057 (81)	762 (30)	762 (30)	910 (2002)
72	50-75	760	4x 6xSBS190F®	2	2057 (81)	1524 (60)	762 (30)	1660 (3652)
125	15-30	224	2x 10xSBS112F®	1	2057 (81)	762 (30)	762 (30)	980 (2156)
125	50-75	340	2x 10xSBS170F®	1	2057 (81)	762 (30)	762 (30)	1330 (2962)
125	50-75	570	3x 10xSBS190F®	2	2057 (81)	1524 (60)	762 (30)	2130 (4686)

Installation

- Top cable entry preferred
- Required Ventilation Clearance:
  - 152 mm (6 in) side / rear
  - 152 mm (6 in) rear / top

Notes

- Sizes may vary for certain options
- Add 152 (6) to height for drip shield
- All dimensions in mm (inches)
- Drawing is not to scale

\* No. of parallel battery strings





### DC UPS Systems – Large Capacity

Staticon has supplied many high power DC UPS systems complete with one, or more, parallel 3 phase input chargers-rectifiers and larger batteries. Chargers and batteries are separate entities and may be located next to each other or in separate rooms / locations. Batteries may be of the VRLA, vented lead acid or NiCd type complete with their own racks. Staticon and EnerSys Canada have a decades-old relationship in providing such systems to their customers. Please consult Staticon regarding any inquiries for such systems.

### DC UPS Battery Capacity Sizing

Staticon will size batteries in accordance with IEEE Std 485 – Recommended Practice for Sizing Lead-Acid Batteries for Stationary Applications, or IEEE Std 1115 – Recommended Practice for Sizing Nickel-Cadmium Batteries for Stationary Applications. Staticon will size chargers in accordance with IEEE Std 946 – Recommended Practice for the Design of DC Auxiliary Power Systems for Generating Stations.

#### IEEE Std 485 (VRLA) or IEEE 1115 (NiCd), Project Battery Load Profile \*

Load Period	Nom V	Min V	Load W	Load A	Duration (min)	Battery Ah Removed	Description
1							Momentary start load
2							Continuous load
3							Momentary end load
:							Additional loads as needed
						Q =	Total discharge duration & capacity Ah

Temperature Correction Factor: \_\_\_\_\_ ( \_\_\_ °C) from customer  
 Design Margin: \_\_\_\_\_ from customer  
 Aging Factor: 1.25 IEEE de-facto standard

A proper IEEE sizing chart will accompany each quoted, sized battery system, based on the above information.

#### IEEE Std 946, Charger Ampere Output Rating

Total Ah Removed :  $Q = P1 \text{ Ah} + P2 \text{ Ah} + P3 \text{ Ah} + \dots \text{ Ah} = \text{_____ Ah}$   
 Max. Continuous DC Load :  $I_{LC} = \text{_____ W} / \text{___ V float} = \text{_____ A}$   
 Max. Non-continuous DC Load :  $I_{LN} = QR / T = (\text{_____ Ah} \times \text{___}) / \text{___ h} = \text{_____ A}$  (battery charging)  
 Required Charger Size :  $I_{DC} = I_{LC} + I_{LN} = \text{_____ A}$  use \_\_\_\_\_ A charger(s)

Q = Battery Ah removed       $I_{LC}$  = Max. continuous DC loads       $I_{LN}$  = Max. non-continuous load (battery charging)  
 R = Battery charge factor = 1.10 (VL), 1.15 (VRLA) or 1.3 (NiCd)      T = Customer required battery recharge time

This charger sizing information is included in each DC UPS quotation.

\* Job-specific IEEE 485 battery sizing sheet to be attached

